

What is claimed is:

1. A method of cementing a zone in a subterranean formation comprising:
providing a cement composition comprising cement, inelastic lost
circulation material particles, and water;
placing the cement composition in the zone in the subterranean formation;
and
permitting the cement composition to set therein.
2. The method of claim 1 wherein the water is present in the cement
composition in an amount sufficient to form a pumpable slurry.
3. The method of claim 1 wherein the water is present in the cement
composition in an amount in the range of from about 30% to about 180% by weight of the
cement.
4. The method of claim 1 wherein the water is present in the cement
composition in an amount in the range of from about 40% to about 50% by weight of the cement.
5. The method of claim 1 wherein the cement comprises a hydraulic cement.
6. The method of claim 5 wherein the hydraulic cement comprises a Portland
cement, a pozzolanic cement, a gypsum cement, a calcium phosphate cement, a high alumina
content cement, a silica cement, a high alkalinity cement, or a mixture thereof.
7. The method of claim 1 wherein the inelastic lost circulation material
particles comprise polyethylene, polypropylene, and/or polystyrene particles.
8. The method of claim 7 wherein the inelastic lost circulation material
particles comprise polyethylene particles.
9. The method of claim 8 wherein the polyethylene particles comprise waste
polyethylene particles.
10. The method of claim 1 wherein the inelastic lost circulation material
particles have a particle size distribution in the range of from about 100 microns to about 5,000
microns.
11. The method of claim 1 wherein the inelastic lost circulation material
particles have a particle size distribution in the range of from about 200 microns to about 2,500
microns.

12. The method of claim 1 wherein the inelastic lost circulation material particles comprise about 45% to about 55% fine-sized particles by weight.

13. The method of claim 1 wherein the inelastic lost circulation material particles comprise about 45% to about 55% medium-sized particles by weight.

14. The method of claim 1 wherein the inelastic lost circulation material particles comprise about 45% to about 55% coarse-sized particles by weight.

15. The method of claim 1 wherein the inelastic lost circulation material particles are present in the cement composition in an amount in the range of from about 1 pound to about 10 pounds per sack of cement.

16. The method of claim 1 wherein the inelastic lost circulation material particles are present in the cement composition in an amount in the range of from about 4 pounds to about 6 pounds per sack of cement.

17. The method of claim 1 wherein the cement composition further comprises fly ash, a fluid loss control additive, a conventional lost circulation material, a surfactant, a dispersant, an accelerator, a retarder, a salt, a mica, fiber, a formation-conditioning agent, fumed silica, bentonite, an expanding additive, a microsphere, a weighting material, or a defoamer.

18. The method of claim 1 wherein the cement composition has a density in the range of from about 4 pounds per gallon to about 20 pounds per gallon.

19. The method of claim 1 wherein the cement composition has a density in the range of from about 8 pounds per gallon to about 17 pounds per gallon.

20. The method of claim 1 wherein the water is present in the cement composition in an amount in the range of from about 40% to about 50% by weight of the cement; wherein the inelastic lost circulation material particles are present in the cement composition in an amount in the range of from about 4 pounds to about 6 pounds per sack of the cement; wherein the inelastic lost circulation material particles comprise polyethylene particles ; wherein the polyethylene particles have a particle size distribution in the range of from about 100 microns to about 5,000 microns; and wherein the cement composition has a density in the range of from about 4 pounds per gallon to about 20 pounds per gallon.

21. A method of reducing the loss of circulation of a cement composition in a zone in a subterranean formation comprising the step of adding inelastic lost circulation material particles to the cement composition.

22. The method of claim 21 wherein the cement composition comprises a hydraulic cement.

23. The method of claim 22 wherein the hydraulic cement comprises a Portland cement, a pozzolanic cement, a gypsum cement, a calcium phosphate cement, a high alumina content cement, a silica cement, a high alkalinity cement, or a mixture thereof.

24. The method of claim 21 wherein the cement composition comprises water present in the cement composition in an amount sufficient to form a pumpable slurry.

25. The method of claim 24 wherein the water is present in the cement composition in an amount in the range of from about 30% to about 180% by weight of the cement.

26. The method of claim 24 wherein the water is present in the cement composition in an amount in the range of from about 40% to about 50% by weight of the cement.

27. The method of claim 21 wherein the inelastic lost circulation material particles comprise polyethylene, polypropylene, and/or polystyrene particles.

28. The method of claim 21 wherein the inelastic lost circulation material particles comprise polyethylene particles.

29. The method of claim 28 wherein the polyethylene particles comprise waste polyethylene particles.

30. The method of claim 21 wherein the cement composition further comprises fly ash, a surfactant, a dispersant, a conventional lost circulation material, a fluid loss control additive, an accelerator, a retarder, a salt, a mica, fiber, a formation-conditioning agent, fumed silica, bentonite, expanding additives, microspheres, weighting materials, or a defoamer.

31. The method of claim 21 wherein the cement composition has a density in the range of from about 4 pounds per gallon to about 20 pounds per gallon.

32. The method of claim 21 wherein the cement composition has a density in the range of from about 8 pounds per gallon to about 17 pounds per gallon.

33. The method of claim 21 wherein the inelastic lost circulation material particles have a particle size distribution in the range of from about 100 microns to about 5,000 microns.

34. The method of claim 21 wherein the inelastic lost circulation material particles have a particle size distribution in the range of from about 200 microns to about 2,500 microns.

35. The method of claim 21 wherein the inelastic lost circulation material particles comprise about 45% to about 55% fine-sized particles by weight.

36. The method of claim 21 wherein the inelastic lost circulation material particles comprise about 45% to about 55% medium-sized particles by weight.

37. The method of claim 21 wherein the inelastic lost circulation material particles comprise about 45% to about 55% coarse-sized particles by weight.

38. The method of claim 21 wherein the inelastic lost circulation material particles are present in the cement composition in an amount in the range of from about 1 pound to about 10 pounds per sack of cement.

39. The method of claim 21 wherein the inelastic lost circulation material particles are present in the cement composition in an amount in the range of from about 4 pounds to about 6 pounds per sack of cement.

40. The method of claim 21 wherein the cement composition comprises water present in the cement composition in an amount in the range of from about 40% to about 50% by weight of the cement; wherein the inelastic lost circulation material particles are present in the cement composition in an amount in the range of from about 4 pounds to about 6 pounds per sack of the cement; wherein the inelastic lost circulation material particles have a particle size distribution in the range of from about 100 microns to about 5,000 microns; and wherein the cement composition has a density in the range of from about 4 pounds per gallon to about 20 pounds per gallon.

41. A cement composition, comprising:
a hydraulic cement;
inelastic lost circulation material particles; and
water.
42. The cement composition of claim 41 wherein the water is present in the cement composition in an amount sufficient to form a pumpable slurry.
43. The cement composition of claim 41 wherein the water is present in the cement composition in an amount in the range of from about 30% to about 180% by weight of the cement.
44. The cement composition of claim 41 wherein the water is present in the cement composition in an amount in the range of from about 40% to about 50% by weight of the cement.
45. The cement composition of claim 41 wherein the hydraulic cement comprises a Portland cement, a pozzolanic cement, a gypsum cement, a calcium phosphate cement, a high alumina content cement, a silica cement, a high alkalinity cement, or a mixture thereof.
46. The cement composition of claim 41 wherein the inelastic lost circulation material particles comprise polyethylene, polypropylene, and/or polystyrene.
47. The cement composition of claim 41 wherein the inelastic lost circulation material particles comprise polyethylene particles.
48. The cement composition of claim 47 wherein the inelastic lost circulation material particles comprise waste polyethylene particles.
49. The cement composition of claim 41 wherein the inelastic lost circulation material particles have a particle size distribution in the range of from about 100 microns to about 5,000 microns.
50. The cement composition of claim 41 wherein the inelastic lost circulation material particles have a particle size distribution in the range of from about 200 microns to about 2,500 microns.
51. The cement composition of claim 41 wherein the inelastic lost circulation material particles are present in the cement composition in an amount in the range of from about 1 pound to about 10 pounds per sack of the cement.

52. The cement composition of claim 41 wherein the inelastic lost circulation material particles are present in the cement composition in an amount in the range of from about 4 pounds to about 6 pounds per sack of the cement.

53. The method of claim 41 wherein the inelastic lost circulation material particles comprise about 45% to about 55% fine-sized particles by weight.

54. The method of claim 41 wherein the inelastic lost circulation material particles comprise about 45% to about 55% medium-sized particles by weight.

55. The method of claim 41 wherein the inelastic lost circulation material particles comprise about 45% to about 55% coarse-sized particles by weight.

56. The cement composition of claim 41 wherein the cement composition further comprises fly ash, a surfactant, a dispersant, a fluid loss control additive, a conventional lost circulation material, an accelerator, a retarder, a salt, a mica, fiber, a formation-conditioning agent, fumed silica, bentonite, expanding additives, microspheres, weighting materials, or a defoamer.

57. The cement composition of claim 41 wherein the cement composition has a density in the range of from about 4 pounds per gallon to about 20 pounds per gallon.

58. The cement composition of claim 41 wherein the cement composition has a density in the range of from about 8 pounds per gallon to about 17 pounds per gallon.

59. The cement composition of claim 41 wherein the water is present in the cement composition in an amount in the range of from about 40% to about 50% by weight of the cement; wherein the inelastic lost circulation material particles are present in the cement composition in an amount in the range of from about 4 pounds to about 6 pounds per sack of the cement; wherein the inelastic lost circulation material particles comprise polyethylene particles; wherein the inelastic lost circulation material particles have a particle size distribution in the range of from about 100 microns to about 5,000 microns; and wherein the cement composition has a density in the range of from about 4 pounds per gallon to about 20 pounds per gallon.

60. A lost circulation material comprising inelastic polyethylene, polystyrene, and/or polypropylene particles.

61. The lost circulation material of claim 60 comprising inelastic particles of polyethylene.

62. The lost circulation material of claim 61 wherein the inelastic polyethylene particles comprise waste polyethylene particles.

63. The lost circulation material of claim 61 having a particle size distribution in the range of from about 100 microns to about 5,000 microns.

64. The lost circulation material of claim 61 having a particle size distribution in the range of from about 200 microns to about 2,500 microns.

65. The lost circulation material of claim 60 wherein the lost circulation material comprises about 45% to about 55% fine-sized particles by weight.

66. The lost circulation material of claim 60 wherein the lost circulation material comprises about 45% to about 55% medium-sized particles by weight.

67. The lost circulation material of claim 60 wherein the lost circulation material comprises about 45% to about 55% coarse-sized particles by weight.